#### What is claimed is:

- 1. A liquid laundry detergent composition comprising
  - (a) at least one detergent ingredient selected from the group consisting of anionic surfactants, zwitterionic surfactants, amphoteric surfactants, and mixtures thereof;
  - (b) a coacervate phase forming cationic polymer;
  - (c) one or more fabric care ingredients selected from the group consisting of
    - (c1) one or more cationic silicone polymers comprising one or more polysiloxane units and one or more nitrogen moieties;
    - (c2) one or more amino silicone polymers;
    - (c3) one or more nitrogen-free silicone polymers; and
    - (c4) mixtures thereof; and
  - (d) a liquid carrier.

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- 2. A liquid laundry detergent composition according to Claim 1 comprising
  - (a) at least one detergent ingredient selected from the group consisting of anionic surfactants, zwitterionic surfactants, amphoteric surfactants, and mixtures thereof;
  - (b) a coacervate phase forming cationic polymer; and
  - (c) one or more cationic silicone polymers comprising one or more polysiloxane units and one or more nitrogen moieties;
  - (d) one or more fabric care ingredients selected from the group consisting of
    - (d1) one or more amino silicone polymers;
    - (d2) one or more nitrogen-free silicone polymers; and
    - (d3) mixtures thereof;
  - (e) a liquid carrier.
- 3. A liquid laundry detergent composition according to Claim 1 further comprising at least one compound selected from the group consisting of
- 30 (a) builders;
  - (b) enzymes;
  - (c) suds suppressor systems; and
  - (d) mixtures thereof.

# Test results:

# 1. Softness of colored fabrics (PSU after 10 cycles)

Ref.	+3.0	+1.3
	1	1.5
Ref.	+2.0	+1.0
Ref.	+1.0	+1.0
Ref.	+2.0	+0.3
_	Ref.	Ref. +1.0

Average softness of colored fabrics Ref. +2.0 +0.9

2. Visual appearance (anti-pilling, fabric abrasion) benefits provided for colored fabrics (PSU after 10 cycles)

	A	В	С
Navy Jumper (blue cotton)	Ref.	+1.8	+0.5
Black T – shirt (B&C – cotton)	Ref.	+1.0	+1.0

		r	~ = -
Average fabric appearance for colored fabrics	Ref.	+1.4	+0.75
		,	

Similar test results can be obtained for all benefits tested under U.S. washing conditions.

### Conclusion:

The test results for Example 5 show that improved performance in terms of fabric softening, antipilling, fabric abrasion or any combination thereof versus the reference composition is obtained. The tests further demonstrate that amino silicones in combination with cationic guar gums are especially well performing.

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- 4. A liquid laundry detergent composition according to Claim 2 further comprising at least one compound selected from the group consisting of
  - (a) builders;
- 5 (b) enzymes;
  - (c) suds suppressor systems; and
  - (d) mixtures thereof.
- A liquid laundry detergent composition according to Claim 1, wherein the cationic silicone
  polymer comprises one or more polysiloxane units and one or more quaternary nitrogen moieties.
  - 6. A liquid laundry detergent composition according to Claim 1, wherein the cationic silicone polymer comprises at least 2 or more polysiloxane units and at least 2 or more quaternary nitrogen moieties.
    - 7. A fabric treatment composition according to claim 6 wherein the cationic silicone polymer has the formula:

$$\left[\begin{array}{c}Z-X-CC_{a}H_{2a}\longrightarrow_{b}R^{2}\left(\begin{array}{c}R^{1}\\ \vdots\\ R^{1}\end{array}\right)\left(\begin{array}{c}R^{1}\\ \vdots\\ R^{3}\end{array}\right)\left(\begin{array}{c}R^{1}\\ \vdots\\ R^{3}\end{array}\right)\left(\begin{array}{c}R^{1}\\ \vdots\\ R^{1}\end{array}\right)-R^{2}\left(-C_{a}H_{2a}O\longrightarrow_{b}X-Z\right]^{n}\right)$$
 nA

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wherein:

- $R^1$  is independently selected from the group consisting of  $C_{1-22}$  alkyl,  $C_{2-22}$  alkenyl,  $C_{6-22}$  alkylaryl, aryl, cycloalkyl, and mixtures thereof;
- R<sup>2</sup> is independently selected from the group consisting of divalent organic moieties;
- X is independently selected from the group consisting of ring-opened epoxides;
- R<sup>3</sup> is independently selected from polyether groups having the formula:

$$-M^{1}(C_{a}H_{2a}O)_{b}-M^{2}$$

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wherein  $M^1$  is a divalent hydrocarbon residue;  $M^2$  is independently selected from the group consisting of H,  $C_{1-22}$  alkyl,  $C_{2-22}$  alkenyl,  $C_{6-22}$  alkylaryl, aryl, cycloalkyl,  $C_{1-22}$  hydroxyalkyl, polyalkyleneoxide, (poly)alkoxy alkyl and mixtures thereof;

- Z is independently selected from the group consisting of monovalent organic moieties comprising at least one quaternized nitrogen atom;
- a is from about 2 to about 4; b is from 0 to about 100; c is from about 1 to about 1000; d is from 0 to about 100; n is the number of positive charges associated with the cationic silicone polymer, which is greater than or equal to about 2; and A is a monovalent anion.
- 10 8. A fabric treatment composition according to claim 7 wherein Z is independently selected from the group consisting of:

(v) monovalent aromatic or aliphatic heterocyclic group, substituted or unsubstituted, containing at least one quaternized nitrogen atom;

wherein:

-  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$  are the same or different, and are selected from the group consisting of  $C_{1-22}$  alkyl,  $C_{2-22}$  alkenyl,  $C_{6-22}$  alkylaryl, aryl, cycloalkyl,  $C_{1-22}$  hydroxyalkyl polyalkyleneoxide (poly)alkoxy alkyl, and mixtures thereof;

- R<sup>15</sup> is -O- or NR<sup>19</sup>;
- R<sup>16</sup> is a divalent hydrocarbon residue;
- 20  $R^{17}$ ,  $R^{18}$ ,  $R^{19}$  are the same or different, and are selected from the group consisting of H,  $C_{1-22}$  alkyl,  $C_{2-22}$  alkenyl,  $C_{6-22}$  alkylaryl, aryl, cycloalkyl,  $C_{1-22}$  hydroxyalkyl, polyalkyleneoxide, (poly)alkoxy alkyl and mixtures thereof; and
  - e is from about 1 to about 6.

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- 9. A fabric treatment composition according to claim 6 wherein the cationic silicone polymer is composed of alternating units of:
  - (i) a polysiloxane of the following formula:

$$-X - CC_aH_{2a} - R^2 - R^2 - R^1 - R^1 - R^1 - R^1 - R^2 - R^2 - R^2 - R^1 - R^2 - R^2$$

; and

- (ii) a divalent organic moiety comprising at least two quaternized nitrogen atoms; wherein:
- $R^1$  is independently selected from the group consisting of  $C_{1-22}$  alkyl,  $C_{2-22}$  alkenyl,  $C_{6-22}$  alkylaryl, aryl, cycloalkyl, and mixtures thereof;
- R<sup>2</sup> is independently selected from the group consisting of divalent organic moieties;
- X is independently selected from the group consisting of ring-opened epoxides;
- R<sup>3</sup> is independently selected from polyether groups having the formula:

 $-M^{1}(C_{a}H_{2a}O)_{b}-M^{2}$ 

wherein  $M^1$  is a divalent hydrocarbon residue;  $M^2$  is independently selected from the group consisting of H,  $C_{1-22}$  alkyl,  $C_{2-22}$  alkenyl,  $C_{6-22}$  alkylaryl, aryl, cycloalkyl,  $C_{1-22}$  hydroxyalkyl, polyalkyleneoxide, (poly)alkoxy alkyl, and mixtures thereof;

- a is from about 2 to about 4; b is from 0 to about 100; c is from about 1 to about 1000; and d is from 0 to about 100.
- 10. A fabric treatment composition according to claim 6 wherein the cationic silicone polymer is composed of alternating units of:
  - (i) a polysiloxane of the following formula:

$$= \left[ X - \left( OC_aH_{2a} - \frac{R^2}{b} R^2 + \frac{R^1}{SiO} \right) - \left( \begin{array}{c} R^1 \\ SiO \\ R^1 \end{array} \right) - \left( \begin{array}{c} R^1 \\ SiO \\ R^3 \end{array} \right) - \left( \begin{array}{c} R^1 \\ SiO \\ R^1 \end{array} \right) - \left$$

; and

(ii) a cationic divalent organic moiety selected from the group consisting of:

(a) 
$$\begin{bmatrix} R^4 & R^6 \\ | \oplus \\ N - Z^1 & N \end{bmatrix} \stackrel{2mA}{\longrightarrow} ;$$

(d) a divalent aromatic or aliphatic heterocyclic group, substituted or unsubstituted, containing at least one quaternized nitrogent atom; and

mixtures thereof;

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wherein  $R^1$  is independently selected from the group consisting of  $C_{1-22}$  alkyl,  $C_{2-22}$  alkenyl,  $C_{6-22}$  alkylaryl, aryl, cycloalkyl, and mixtures thereof;

- R<sup>2</sup> is independently selected from the group consisting of divalent organic moieties;
- X is independently selected from the group consisting of ring-opened epoxides;
- R<sup>3</sup> is independently selected from polyether groups having the formula:

$$-M^{1}(C_{a}H_{2a}O)_{b}-M^{2}$$

wherein  $M^1$  is a divalent hydrocarbon residue;  $M^2$  is independently selected from the group consisting of H,  $C_{1-22}$  alkyl,  $C_{2-22}$  alkenyl,  $C_{6-22}$  alkylaryl, aryl, cycloalkyl,  $C_{1-22}$  hydroxyalkyl, polyalkyleneoxide, (poly)alkoxy alkyl, and mixtures thereof;

- $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$ ,  $R^{10}$ ,  $R^{11}$  are the same or different, and are selected from the group consisting of  $C_{1-22}$  alkyl,  $C_{2-22}$  alkenyl,  $C_{6-22}$  alkylaryl, aryl, cycloalkyl,  $C_{1-22}$  hydroxyalkyl, polyalkyleneoxide, (poly)alkoxy alkyl, and mixtures thereof; or in which  $R^4$  and  $R^6$ , or  $R^5$  and  $R^7$ , or  $R^8$  and  $R^{10}$ , or  $R^9$  and  $R^{11}$  are components of a bridging alkylene group;
- $Z^1$  and  $Z^2$  are the same or different divalent hydrocarbon groups each comprising at least about 2 carbon atoms;
- a is from about 2 to about 4; b is from 0 to about 100; c is from about 1 to about 1000; d

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is from 0 to about 100;

- m is the number of positive charges associated with the cationic divalent organic moiety, which is greater than or equal to about 2; A is an anion; and wherein, expressed as fractions on the total moles of the organosilicone free moieties, the cationic divalent organic moiety (ii) is present at of from about 0.05 to about 1.0 mole fraction.
- 11. A fabric treatment composition according to claim 10 wherein the cationic silicone further comprises a polyalkyleneoxide amine of formula:

$$[-Y - O(-C_aH_{2a}O)_b - Y - ]$$

wherein Y is a divalent organic group comprising a secondary or tertiary amine; a is from about 2 to about 4; b is from 0 to about 100; and the polyalkyleneoxide amine is present of from 0.0 to about 0.95 mole fraction.

12. A fabric treatment composition according to claim 10 wherein the cationic silicone further comprises an end-group cationic monovalent organic moiety selected from the group consisting of:

$$(i) \underbrace{ \begin{matrix} \begin{matrix} R^{12} \\ \begin{matrix} I \\ \end{matrix} \end{matrix} }_{\substack{R^{14}} \end{matrix} R^{13} \qquad \qquad (ii) \underbrace{ \begin{matrix} \begin{matrix} R^{12} \\ \begin{matrix} I \\ \end{matrix} \end{matrix} }_{\substack{R^{14}} \end{matrix} CH_2 \underbrace{ \begin{matrix} \begin{matrix} I \\ \end{matrix} \end{matrix} }_{\substack{R^{15} \\ \end{matrix} \end{matrix} } C - R^{12}$$

 (v) monovalent aromatic or aliphatic heterocyclic group, substituted or unsubstituted, containing at least one quaternized nitrogen atom;

wherein:

-  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$  are the same or different, and are selected from the group consisting of  $C_{1-22}$  alkyl,  $C_{2-22}$  alkenyl,  $C_{6-22}$  alkylaryl,  $C_{1-22}$  hydroxyalkyl, polyalkyleneoxide, (poly)alkoxy alkyl groups, and mixtures thereof;

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- R<sup>15</sup> is -O- or NR<sup>19</sup>;
- R<sup>16</sup> is divalent hydrocarbon residue;
- $R^{17}$ ,  $R^{18}$ ,  $R^{19}$  are the same or different, and are selected from the group consisting of H,  $C_{1.22}$  alkyl,  $C_{2.22}$  alkenyl,  $C_{6.22}$  alkylaryl, aryl, cycloalkyl,  $C_{1.22}$  hydroxyalkyl, polyalkyleneoxide, (poly)alkoxy alkyl, and mixtures thereof; e is from about 1 to about 6; and the cationic monovalent organic moiety is present of from 0 to about 0.2 mole fraction.
- 13. A fabric treatment composition according to claim 11 wherein the cationic silicone further comprises an end-group cationic monovalent organic moiety selected from the group consisting of:

(v) monovalent aromatic or aliphatic heterocyclic group, substituted or unsubstituted, containing at least one quaternized nitrogen atom;

wherein:

- $R^{12}$ ,  $R^{13}$ ,  $R^{14}$  are the same or different, and are selected from the group consisting of  $C_{1.22}$  alkyl,  $C_{2.22}$  alkenyl,  $C_{6.22}$  alkylaryl,  $C_{1.22}$  hydroxyalkyl, polyalkyleneoxide, (poly)alkoxy alkyl groups, and mixtures thereof;
- R<sup>15</sup> is -O- or NR<sup>19</sup>;
- R<sup>16</sup> is divalent hydrocarbon residue;
- $R^{17}$ ,  $R^{18}$ ,  $R^{19}$  are the same or different, and are selected from the group consisting of H,  $C_{1.22}$  alkyl,  $C_{2.22}$  alkenyl,  $C_{6.22}$  alkylaryl, aryl, cycloalkyl,  $C_{1.22}$  hydroxyalkyl, polyalkyleneoxide, (poly)alkoxy alkyl, and mixtures thereof; e is from about 1 to about 6; and the cationic monovalent organic moiety is present of from 0 to about 0.2 mole fraction.
- 14. A fabric treatment composition according to claim 6 wherein the cationic silicone polymer has the formula:

$$\begin{bmatrix} R^{1} & R^{1} & R^{1} & R^{1} \\ SiO & SiO & Si & R^{2} & C_{a}H_{2a}O_{b} & X & W & X & COC_{a}H_{2a}J_{b} & R^{2} & Si & CSi & CSi & R^{1} \\ R^{1} & R^{3} & R^{3} & R^{4} & R^{4} & R^{2} & R^{2} & R^{2} & R^{2} & R^{3} & R^{4} \end{bmatrix}$$

wherein:

- $R^1$  is independently selected from the group consisting of  $C_{1-22}$  alkyl,  $C_{2-22}$  alkenyl,  $C_{6-22}$  alkylaryl, aryl, cycloalkyl, and mixtures thereof;
- R<sup>2</sup> is independently selected from the group consisting of divalent organic moieties;
- X is independently selected from the group consisting of ring-opened epoxides;
- R<sup>3</sup> is independently selected from polyether groups having the formula:

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$$-M^{1}(C_{a}H_{2a}O)_{b}-M^{2}$$

wherein  $M^1$  is a divalent hydrocarbon residue;  $M^2$  is selected from the group consisting of H,  $C_{1-22}$  alkyl,  $C_{2-22}$  alkenyl,  $C_{6-22}$  alkylaryl, aryl, cycloalkyl,  $C_{1-22}$  hydroxyalkyl, polyalkyleneoxide, (poly)alkoxy alkyl, and mixtures thereof;

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- W is independently selected from the group consisting of divalent organic moieties comprising at least one quaternized nitrogen atom;
- a is from about 2 to about 4; b is from 0 to about 100; c is from about 1 to about 1000; d is from 0 to about 100; n is the number of positive charges associated with the cationic silicone polymer, which is greater than or equal to about 1; and A is a counterion.

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15. A fabric treatment composition according to claim 14 wherein W is selected from the group consisting of:

(a) 
$$\begin{array}{c|c} R^4 & R^6 \\ \hline N \\ R^5 & R^7 \end{array} \stackrel{2mA}{\longrightarrow} ^{2mA}$$

(d) a divalent aromatic or aliphatic heterocyclic group, substituted or unsubstituted, containing at least one quaternized nitrogent atom; and

mixtures thereof;

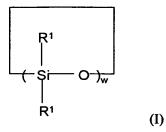
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wherein  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$ ,  $R^{10}$ ,  $R^{11}$  are the same or different, and are selected from the group consisting of  $C_{1-22}$  alkyl,  $C_{2-22}$  alkenyl,  $C_{6-22}$  alkylaryl, aryl, cycloalkyl,  $C_{1-22}$  hydroxyalkyl, polyalkyleneoxide, (poly)alkoxy alkyl, and mixtures thereof; or in which  $R^4$  and  $R^6$ , or  $R^5$  and  $R^7$ , or  $R^8$  and  $R^{10}$ , or  $R^9$  and  $R^{11}$  are components of a bridging alkylene group;

- m is the number of positive charges associated with the cationic divalent organic moiety, which is greater than or equal to about 2; A is an anion; and
- $Z^1$  and  $Z^2$  are the same or different divalent hydrocarbon groups each comprising at least about 2 carbon atoms.
- 16. A liquid laundry detergent composition according Claim 1 wherein the nitrogen-free silicone polymer is selected from the group consisting of nonionic nitrogen-free silicone polymers having a formulae selected from (I) to (III):



$$R^2$$
— $(R^1)_2$ SiO— $[(R^1)_2$ SiO]<sub>a</sub>— $[(R^1)(R^2)$ SiO]<sub>b</sub>—Si $(R^1)_2$ — $R^2$ 

(II)

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and mixtures thereof,

wherein each R<sup>1</sup> is independently selected from the group consisting of linear, branched or cyclic alkyl groups having from about 1 to about 20 carbon atoms; linear, branched or cyclic alkenyl groups having from about 2 to about 20 carbon atoms; aryl groups having from about 6 to about 20 carbon atoms; alkylaryl groups having from about 7 to about 20 carbon atoms; arylalkyl and arylalkenyl groups having from about 7 to about 20 carbon atoms and mixtures thereof; each R<sup>2</sup> is independently selected from the group consisting of linear, branched or cyclic alkyl groups having from about 1 to about 20 carbon atoms; linear, branched or cyclic alkenyl groups having from about 2 to about 20 carbon atoms; aryl groups having from about 20 carbon atoms; aryl groups having from about 5 to about 20 carbon atoms; arylalkyl; arylalkenyl groups having from about 7 to about 20 carbon atoms and from a poly(ethyleneoxide/propyleneoxide) copolymer group having the general formula (IV):

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$$-(CH2)n O(C2 H4 O)c (C3 H6 O)d R3$$
 (IV)

wherein at least one R<sup>2</sup> is a poly(ethyleneoxy/propyleneoxy) copolymer group, and each R<sup>3</sup> is independently selected from the group consisting of hydrogen, alkyl groups having from about 1 to about 4 carbon atoms, acetyl groups, and mixtures thereof, wherein the index w has the value as such that the viscosity of the nitrogen-free silicone polymer of formulae (I) and (III) is between about 2 · 10<sup>-6</sup> m<sup>2</sup>/s (about 2 centistokes at 20 °C) and about 50 m<sup>2</sup>/s (about 50,000,000 centistokes at 20 °C); wherein a is from about 1 to about 50; b is from about 1 to about 50; n is about 1 to about 50; total c (for all polyalkyleneoxy side groups) has a value of from about 1 to about 100; total d is from 0 to about 14; total c+d has a value of from about 5 to about 150.

17. A liquid laundry detergent composition according to Claim 1 further comprising one or more laundry adjunct materials selected from the group consisting of stabilizers; coupling

agents; fabric substantive perfumes; fabric softeners; chelating agents; effervescent systems; cationic surfactants; nonionic surfactants; and mixtures thereof.

- 18. A liquid laundry detergent composition according to Claim 1, wherein the coacervate phase forming cationic polymer is of natural or synthetic origin and selected from the group consisting of substituted and unsubstituted polyquaternary ammonium compounds, cationically modified polysaccharides, cationically modified (meth)acrylamide polymers, cationically modified (meth)acrylamide copolymers, cationically modified (meth)acrylate polymers, cationically modified (meth)acrylate copolymers, chitosan, quaternized vinylimidazole polymers, quaternized vinylimidazole copolymers, dimethyldiallylammonium polymers, dimethyldiallylammonium copolymers, polyethylene imine based polymers, cationic guar gums; derivatives thereof; and mixtures thereof.
- 19. A liquid laundry detergent composition according to Claim 18, wherein the coacervate phase forming cationic polymer is selected from the group consisting of cationic guar hydroxypropyltriammonium salts, and derivatives thereof.
- Use of the liquid laundry detergent composition according to Claim 1 to impart on a fabric substrate fabric cleaning benefits and at least one or more fabric care benefits selected from the group consisting of reduction of wrinkles benefits; removal of wrinkles benefits; prevention of wrinkles benefits; fabric softness benefits; fabric feel benefits; garment shape retention benefits; garment shape recovery benefits; elasticity benefits; ease of ironing benefits; perfume benefits; color care benefits; and combinations thereof.
- 25 21. A method for providing fabric softening benefits, anti-abrasion benefits, anti-pilling benefits or any combination thereof to fabrics, which method comprises treating said fabric with the liquid laundry detergent composition according to any of the preceding claims.
  - 22. A method according to Claim 21, wherein said fabrics are colored fabrics.
  - 23. A method according to Claim 21, wherein said composition comprises an amino silicone polymer as fabric care ingredient.

- 24. A method for treating a substrate comprising contacting the substrate with a liquid laundry detergent composition according to Claim 1.
- 25. A process for preparing a liquid laundry detergent composition according to Claim 1 comprising a set of steps of:
  - a. premixing the coacervate phase forming cationic polymer with the fabric care ingredient;
  - b. premixing all other laundry detergent ingredients; and
  - c. combining said two premixes a) and b).

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- 26. A process for preparing a liquid laundry detergent composition according to Claim 1 comprising a set of steps of:
  - a) preparing a premix comprising all other ingredients except the coacervate phase forming cationic polymer and except the fabric care ingredient;
  - b) combining the premix from step a) with the coacervate phase forming polymer; and
  - c) combining the fabric care ingredient with the mixture of step b).